We claim:

1. An upper extremity exoskeleton structure for test and exercise comprising:

a plurality of links, a plurality of revolute joints, and a plurality of measuring-loading blocks wherein each said measuring-loading block having a resistance mechanism, a force sensor, and an angle sensor connected with said links through said revolute joints, and said links jointed to each other by said revolute joints forming a sternoclavicular, a shoulder, an elbow and a wrist modules;

said sternoclavicular module includes a shouldergirdle harness, two said measuring-loading blocks, two said revolute joints and said links wherein rotation axes of said revolute joints intersect each other at 90-degree angle;

said shoulder module includes an upper arm harness, three said measuring-loading blocks, three said revolute joints and said links wherein said rotation axes of said revolute joints intersect each other at 90-degree angle;

said elbow module includes a forearm harness, two said measuring-loading blocks, two said revolute joints and said links wherein said rotation axes of said revolute joints intersect each other at 90-degree angle;

said wrist module includes a hand harness, two said measuring-loading blocks, two said revolute joints and said links wherein said rotation axes of said revolute joints intersect each other at 90-degree angle;

a plurality of means to connect said modules with each other forming said exoskeleton structure;

a plurality of means to compensate anthropometrical differences of the upper extremities between different users;

a means to secure said exoskeleton structure to a stationary object;

a plurality of means to counterbalance said exoskeleton structure.

2. An exoskeleton structure to claim 1,

wherein said rotation axes of said exoskeleton structure, being secured to a user's upper extremity, intersect each other in the center of the user's sternoclavicular joint for said sternoclavicular module, in the center of the user's shoulder joint for said shoulder module, in the center of the user's elbow joint for said elbow module, and in the center of the user's wrist joint for said wrist module.

3. An exoskeleton structure to claim 1,

wherein number of said modules connected by said plurality of connecting means forming said exoskeleton structure is changeable in accordance with the predetermined locomotor act and user's joints participating in that locomotor act.

4. A method for an upper extremity test and exercise comprising:

a disposition of said exoskeleton structure on said user's upper extremity in such a way where each said rotation axis of said modules coincides with corresponding anatomical axis of anatomical joints of the user's upper extremity for each anatomical rotation of segments of the user's upper extremity in anatomical joints;

a securement of said exoskeleton structure to upper extremity segments in such a way where said disposition of said rotation axes of said modules is preserved during whole cycle of the predetermined locomotor act;

an adjustment selectively of an exercise load in each said resistance mechanism of said exoskeleton structure in accordance with the predetermined locomotor act;

a performing of the predetermined locomotor act by the user;

a measurement of muscle forces and joint angles of the user's upper extremity by said force sensors, and said angle sensors of said exoskeleton structure.

5. A method to claim 4,

wherein the anatomical joints of the user's upper extremity that being loaded and measured by said exoskeleton structure are a sternoclavicular joint with its two anatomical rotations, a shoulder joint with its three anatomical rotations, an elbow joint with its two anatomical rotations, and a wrist joint with its two anatomical rotations.